

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : TOKYO SEIMITSU CO LTD

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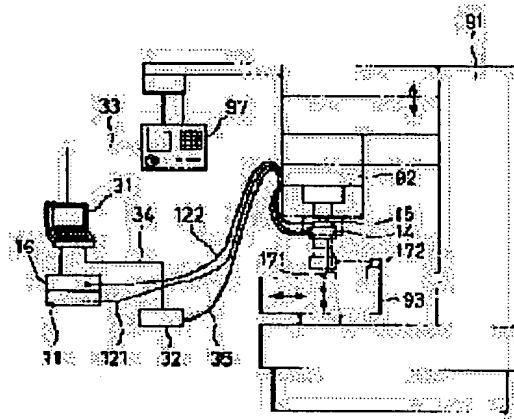
(72)Inventor : OSAWA NOBUYUKI

## (54) SYSTEM FOR MEASURING ERROR IN MOVEMENT OF MACHINE TOOL

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To easily conduct measuring work on the errors in the movement of a machine tool.

**SOLUTION:** A system for measuring errors in the movement of a machine tool, in which the movement errors of respective moving shafts of a machine tool 91 are measured by using a laser length measuring machine, is provided with such a rotating mechanism as rotates an interference optical unit of a laser length measuring machine, which emits a measuring laser beam toward measuring corner cubes 171, 172 fixed in the moving part, in correspondence to the external signal.



## LEGAL STATUS

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(71)Applicant : TOSHIBA MACH CO LTD

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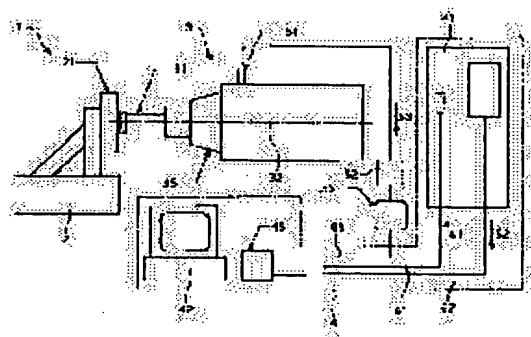
(72)Inventor : TOKUYAMA HARUMICHI  
ABE FUJIO

## (54) REPLACEMENT TIMING DECISION SYSTEM FOR TOOL

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a replacement timing decision system of a tool which can be constituted by reducing a cost further with higher liability.

**SOLUTION:** A replacement timing decision system of a tool measuring the vibration of a rotary tool 31 having a cutting edge by a vibration sensor 51 to decide replacement timing of the rotary tool 31 is provided with a filter 53 separating a prescribed frequency band from a vibration sensor signal S3 output from the vibration sensor 51, taking means synchronizing with a trigger signal S2 of 1 pulse relating to one turn of the rotary tool 31 to take in the vibration sensor signal S3 through the filter 53, and a decision means deciding replacement timing of the rotary tool 31 from the vibration sensor signal S3 taken in by this taking in means. The vibration sensor signal S3 is taken in synchronized with the rotation of the rotary tool 31, so that a vibration characteristic in accordance with a cutting edge position can be clearly detected.



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